C H A P T E R **2**

Preparing for Installation

This chapter provides information that you need to know before installing a client adapter.

The following topics are covered in this chapter:

Safety information

Follow the guidelines in this section to ensure proper operation and safe use of the client adapter.

FCC Safety Compliance Statement

The FCC, with its action in ET Docket 96-8, has adopted a safety standard for human exposure to RF electromagnetic energy emitted by FCC-certified equipment. When used with approved Cisco Aironet antennas, Cisco Aironet products meet the uncontrolled environmental limits found in OET-65 and ANSI C95.1, 1991. Proper operation of this radio device according to the instructions in this publication will result in user exposure substantially below the FCC recommended limits.

Safety Guidelines

- Do not touch or move the antenna while the unit is transmitting or receiving.
- Do not hold any component containing a radio such that the antenna is very close to or touching any exposed parts of the body, especially the face or eyes, while transmitting.
- Do not operate the radio or attempt to transmit data unless the antenna is connected; otherwise, the radio may be damaged.
- High-gain, wall-mount, or mast-mount antennas are designed to be professionally installed and should be located at a minimum distance of 12 inches (30 cm) or more from the body of all persons. Please contact your professional installer, VAR, or antenna manufacturer for proper installation requirements.
- Use in specific environments:
  - The use of wireless devices in hazardous locations is limited to the constraints posed by the safety directors of such environments.
  - The use of wireless devices on airplanes is governed by the Federal Aviation Administration (FAA).
  - The use of wireless devices in hospitals is restricted to the limits set forth by each hospital.

Warnings

Observe the following warnings when operating the client adapter:

⚠ **Warning** **Do not operate your wireless network device near unshielded blasting caps or in an explosive environment unless the device has been modified to be especially qualified for such use.**

⚠ **Warning** **In order to comply with FCC radio frequency (RF) exposure limits, dipole antennas should be located at a minimum of 7.9 inches (20 cm) or more from the body of all persons.**

⚠ **Warning** **In order to comply with RF exposure limits established in the ANSI C95.1 standards, it is recommended when using a laptop with a PC card client adapter that the adapter's integrated antenna is positioned more than 2 inches (5 cm) from your body or nearby persons during extended periods of transmitting or operating time. If the antenna is positioned less than 2 inches (5 cm) from the user, it is recommended that the user limit exposure time.**

Translated versions of these safety warnings are provided in Appendix B.

Unpacking the Client Adapter

Follow these steps to unpack the client adapter:

Step 1 Open the shipping container and carefully remove the contents.

Step 2 Return all packing materials to the shipping container and save it.

Step 3 Ensure that all items listed in the "Package Contents" section below are included in the shipment. Check each item for damage.

✎ **Note** If any item is damaged or missing, notify your authorized Cisco sales representative. Any remote antenna and its associated wiring are shipped separately.

Package Contents

Each client adapter is shipped with the following items:

- Standard 2-dBi dipole antenna (PCI cards only)
- *Quick Start Guide: Cisco Aironet Wireless LAN Client Adapters*
- Cisco Aironet Wireless LAN Client Adapters CD
- Cisco product registration card

System Requirements

In addition to the items shipped with the client adapter, you also need the following items in order to install and use the adapter:

- One of the following computing devices running Windows 98, 98 SE, NT, 2000, Me, or XP:
    - Laptop or notebook computer equipped with a Type II or Type III PC card slot or Cardbus slot
    - Desktop personal computer equipped with an empty PCI expansion slot
    - Handheld or portable device with an embedded LM card
    - Laptop or other computing device with an embedded mini PCI card

    > **Note**   Install Wizard version 1.3 or later and its software components are not supported for use with Windows 98, 98 SE, NT, and Me.

    > **Note**   PC-Cardbus cards are not supported for use with Windows NT.

    > **Note**   Cisco recommends using a display with a minimum resolution of 800 x 600 pixels.

    > **Note**   All drivers and supporting software (Card and Socket Services) for the PC card slot or Cardbus slot must be loaded and configured.

- 35 MB of free hard disk space (minimum)
- A maximum of eight network connections if your computer is running Windows 98 or 98 SE

    > **Note**   Windows 98 and 98 SE limit your computer's network connections. If you try to install a client adapter when eight network devices (such as a PCMCIA Ethernet card, dial-up adapter, VPN adapter, docking station Ethernet card, etc.) are already connected to your computer, the new adapter cannot establish a network connection.

- Windows NT Service Pack 6 or later if your computer is running Windows NT
- A Phillips screwdriver (for PCI cards)
- Software with WPA support if your wireless network uses host-based EAP authentication with WPA:
    - Funk Odyssey Client supplicant version 2.2 (for Windows 2000)
    - Windows XP Service Pack 1 and Microsoft support patch 815485 (for Windows XP)

    > **Note**   Meetinghouse AEGIS Client supplicant version 2.1 or later is also supported for use with Windows 2000 and XP; however, it was not tested with this client adapter software release.

- The Microsoft 802.1X supplicant, if your wireless network uses EAP-TLS, PEAP, or EAP-SIM authentication

- If your wireless network uses PEAP authentication with a One-Time Password (OTP) user database:

  - SofToken version 1.3, 2.0, or later from Secure Computing; SecurID version 2.5 from RSA; or hardware token from OTP vendors

  - Your software token PIN or hardware token password

- If your wireless network uses EAP-SIM authentication:

  - PCSC-compliant smartcard reader installed in your computer's Type II or Type III PC card slot

  - Gemplus SIM+ smartcard inserted in the reader

  - The SIM card's PIN

> **Note** The EAP-SIM supplicant included in the Install Wizard file supports only Gemplus SIM+ cards; however, an updated supplicant is available that supports standard GSM-SIM cards as well as more recent versions of the EAP-SIM protocol. The new supplicant is available for download from Cisco.com at the following URL:
> http://www.cisco.com/cgi-bin/tablebuild.pl/access-registrar-encrypted

- The following information from your system administrator:

  - The logical name for your workstation (also referred to as *client name*)

  - The protocols necessary to bind to the client adapter

  - The case-sensitive service set identifier (SSID) for your RF network

  - If your network setup does not include a DHCP server, the IP address, subnet mask, and default gateway address of your computer

  - The wired equivalent privacy (WEP) keys of the access points with which your client adapter will communicate, if your wireless network uses static WEP for security

  - The username and password for your network account

  - Protected access credentials (PAC) file if your wireless network uses EAP-FAST authentication with manual PAC provisioning

Site Requirements

This section discusses the site requirements for both infrastructure and client devices.

For Infrastructure Devices

Because of differences in component configuration, placement, and physical environment, every network application is a unique installation. Therefore, before you install any wireless infrastructure devices (such as access points, bridges, and base stations, which connect your client adapters to a wired LAN), a site survey must be performed to determine the optimum placement of these devices to maximize range, coverage, and network performance. Appendix F, which is provided for people who are responsible for conducting a site survey, explains how ACU's site survey tool can be used to determine the best placement for infrastructure devices within a wireless network.

> **Note** Infrastructure devices are installed and initially configured prior to client devices.

For Client Devices

Because the client adapter is a radio device, it is susceptible to RF obstructions and common sources of interference that can reduce throughput and range. Follow these guidelines to ensure the best possible performance:

• Install the client adapter in an area where large steel structures such as shelving units, bookcases, and filing cabinets will not obstruct radio signals to and from the client adapter.

• Install the client adapter away from microwave ovens. Microwave ovens operate on the same frequency as the client adapter and can cause signal interference.